

Southern California Edison
Circle City and Mira Loma-Jefferson PTC A.15-12-007

DATA REQUEST SET A1512007 ED-SCE-12

To: ENERGY DIVISION

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Question 12.5:

Evaluate the possibility that there may not be a need for a Corona Substation connection associated with Options TCC and FCC. In addition, could one of the energy storage sites be located at the Circle City Substation property while feeding Chase Substation through the proposed Chase-Circle City-Databank line? These possibilities could reduce the land acquisition challenge from 3 sites to 1 site, and would reduce the mileage of associated subtransmission line considerably.

Response to Question 12.5:

SCE's response to this question is largely the same as its response to Question No. 12.3 as the first part of this question is essentially the same; namely to evaluate the TCC and FCC Options without battery storage at Corona Substation.

The second part of the question asks SCE to evaluate the TCC and FCC Options as in part 1, but instead of the two battery storage facilities being located at Jefferson and Chase Substations, they would be installed at Jefferson and Circle City Substations.

SCE agrees with the observation in the ZGlobal report that battery storage may be more effective when located at Circle City Substation than at Corona Substation. Following this observation and then performing an evaluation whereby the number of battery storage sites would be reduced from three to two (one of the two would be Circle City Substation), the result would be only one additional substation site. SCE evaluated this and believes it could be possible to eliminate the proposed battery storage facilities connected to Chase Substation if the battery storage that would be proposed at Circle City Substation were appropriately sized. SCE's observations are below.

TCC Option (Battery Storage at Jefferson and Circle City Substations)

SCE modeled 50 MW of battery storage at Circle City Substation (in addition to the ZGlobal proposed amount at Jefferson Substation) and observed that through 2027, under peak load conditions and all facilities in-service, there were no overload conditions; however, the Cust Sub1-Jefferson 66 kV Line was at 99% of its operating limit with both generators producing at Cust Sub1 and Cust Sub3. Through 2027, under peak load conditions and during N-1 conditions, there were no observed overload conditions and the Mira Loma-Corona 66 kV Line was at 84% of its emergency operating limit.

Under the above scenario, but with the MLJ Line in-service, during normal conditions with all facilities in-service the 99% loading identified is lowered to 85%. The observation here is that without the MLJ Line, it is reasonable to expect that within a year or two beyond 2027, there would be the potential for generation curtailment from either or both of the generation sources on that line. This same exposure is not present with the MLJ Line in-service. Additionally, with the MLJ Line in-service, during N-1 conditions the loading of the Mira Loma-Corona 66 kV Line was reduced to 62% of its emergency operating limit.

SCE also notes that during an N-1 of the Mira Loma-Cust Sub3-Cust Sub1 66 kV Line, if both battery storage installations are not fully functional, available, and on-line¹, there are low-voltage violations observed at Circle City, Chase, Cust Sub1, and Cust Sub2 Substations. This same concern is not present with the MLJ Line in-service.

FCC Option

SCE modeled 50 MW of battery storage at Circle City Substation (in addition to the ZGlobal proposed amount at Jefferson Substation) and observed that through 2027, under peak load conditions and all facilities in-service, there were no observed overload conditions; however, the Cust Sub1-Jefferson 66 kV Line was at 98% of its operating limit with both generators producing at Cust Sub1 and Cust Sub3. Through 2027, under peak load conditions and during N-1 conditions, there were no observed overload conditions and the Mira Loma-Corona 66 kV Line was at 86% of its emergency operating limit.

Under the above scenario, but with the MLJ Line in-service, during normal conditions with all facilities in-service the 98% loading identified is lowered to 81%. The observation here is that without the MLJ Line, it is reasonable to expect that within a year or two beyond 2027, there would be the potential for generation curtailment from either or both of the generation sources on that line. This same exposure is not present with the MLJ Line in-service. Additionally, with the MLJ Line in-service, during N-1 conditions the loading of the Mira Loma-Corona 66 kV Line was reduced to 64% of its emergency operating limit.

SCE also notes that during an N-1 of the Mira Loma-Cust Sub3-Cust Sub1 66 kV Line, even if both battery storage installations are not functional and on-line, there are no low-voltage violations observed.

Lastly and in summary to the above options, SCE has thus far only evaluated the battery storage facilities at any of the locations with respect to MW values and not MWh values.

¹ The use of large-scale utility-owned battery storage to satisfy a myriad of various system related issues and contingencies is relatively new. The sole reliance on this technology as a means to solve all potential issues with varying durations may not be considered prudent at this time. The role that these potential battery storage facilities would have is just beginning to be experienced and learned from. It would be prudent planning to take into consideration the potential for unforeseen events, impacts, or outcomes of relying on battery storage and therefore plan around the contingencies in the event the batteries do not solve a system problem that they were expected to. This is another consideration for retaining the Mira Loma-Jefferson 66 kV

Line portion of the project.